

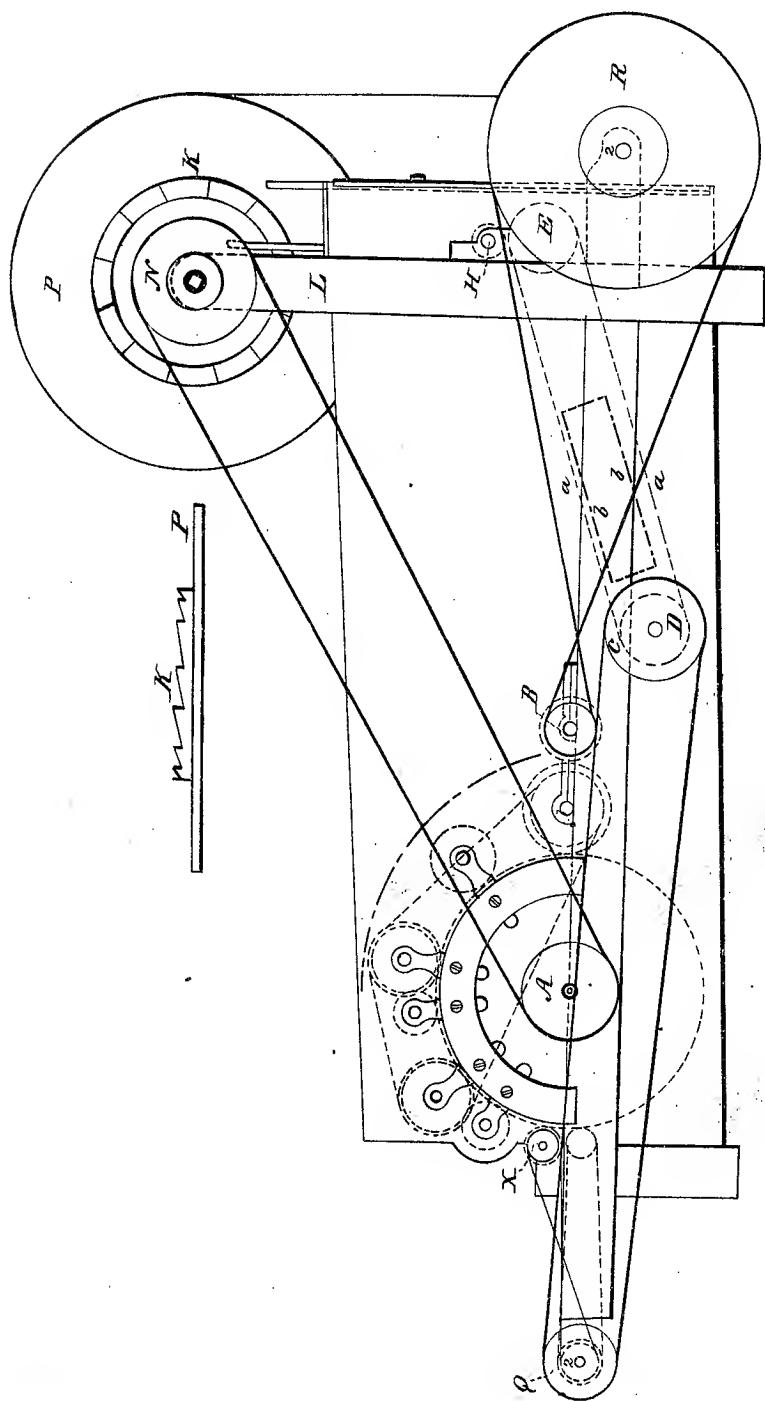
Sheet 1 of 2 Sheets.

T. Blanchard.

Forming Bars.

No 230

Patented Jun. 14, 1837.



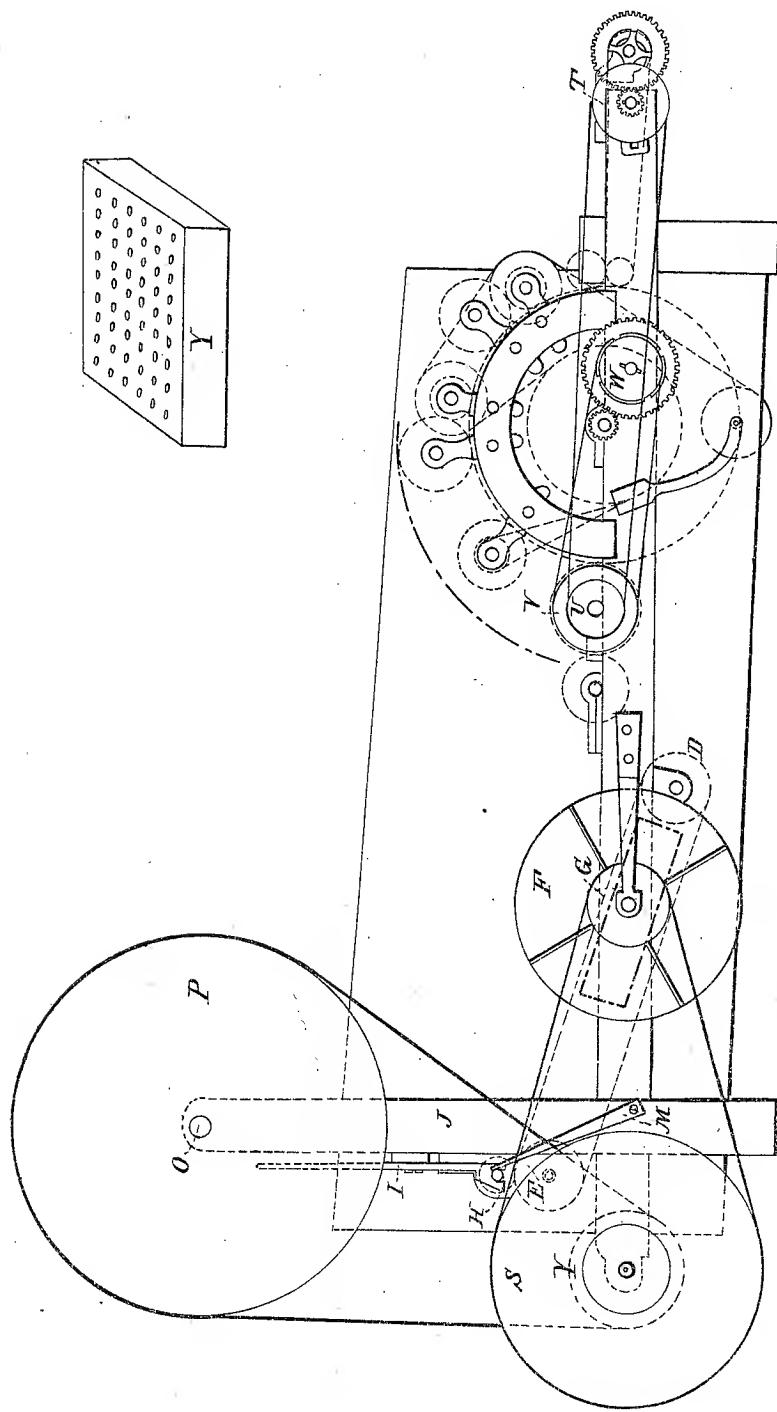
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T. Blanchard.

Forming Bats.

Nº 230

Patented Jun. 14, 1837.



UNITED STATES PATENT OFFICE.

THOMAS BLANCHARD, OF NEW YORK, N. Y.

MAKING A BATTING OR WEB FOR HAT-BODIES.

Specification of Letters Patent No. 230, dated June 14, 1837.

To all whom it may concern:

Be it known that I, THOMAS BLANCHARD, of the city, county, and State of New York, have invented a new and useful Improvement in Machinery for Making a Batting or Web of Fur; and that the following is a full and exact description of the construction and manner of operating said machine as invented by me,—that is to say:

Whereas certain machines called carding machines are well known and in use by the manufacturers of cotton and wool, and other fibrous substances and also certain machines are known and used by hatters in conjunction with the carding machine for making hat bodies of wool, but these machines or any combination of them have not heretofore been known or used for making a continued batting, or web of fur; now my machine consists in the application of certain parts of such known machines, in combination with other parts which have not heretofore been known or used in said machines, the old and new parts being so arranged proportioned and combined as to produce a machine capable of making a batting, or web of fur for the purpose of making fur hat bodies with it; and for preparing furs for napping all description of hat bodies, (instead of bowing in the usual manner), and for other purposes; and for the more perfect explanation of my said machine reference is made to the drawings hereunto annexed, No. 1 and No. 2, where the several parts of my machine are distinguished from each other by letters of reference.

It commences with a common carding machine, with one main cylinder, with its usual feed apron, its feed rollers, its lickerin. The main cylinder marked, A, has a motion of about 80 turns in a minute, and its workers, and strippers, its fancy, and doffing cylinder, as represented around it in dotted lines, all which is so common and so well known to mechanics as to need no further description, as it is in no way altered by me,—except that the cylinders are smaller than usual and the card teeth are finer and set thicker than for other purposes. I have dispensed with the comb and have placed a quick fancy to operate upon the doffer by which the fur is thrown into the air in the next department of the machine, where it is formed as hereinafter described into a bat, or web for napping all description of hat bodies, and for making bodies to hats of fur instead of

bowing in the usual method, and for other purposes, by the following machinery: the plates of the carding machine extending back of the card supported in front by two legs and in the rear by being let into and so supported by two upright posts marked, J and L; under the whole of which, a frame or box is built close and tight. Two rollers for supporting and moving the vellum, or wire cloth apron, a, a, which rollers are marked D E, and are placed in their bearings as represented back of the card; one of the rollers on which the driving pulley C is placed turns in boxes under the plates and is marked D, the other roller which is marked E supports the back section of the vellum and turns in boxes attached to the upright posts J and L, above the plates of the frame, said roller E, and under the plates roller D lay, (having their bearings as before described) horizontal and parallel to each other, and are at a distance of about five feet apart, the back roller E elevated about one foot above the roller D. Around these rollers moves like a feed apron said vellum, or wire cloth which is endless; between the upper and lower sides of the said vellum and extending nearly to the said rollers D and E is placed a stationary box (shown in section by the red lines b, b, and in perspective at Y) with the top open to receive the air that comes through the fur and upper side of the wire vellum; two holes are cut near each other through one of the plates of the frame and through the side of the box opening into the space between the upper and lower part of the vellum, these holes being sufficiently large for the air to pass, which is drawn by the draft of a fan marked F, which fan is formed on a horizontal shaft, having its inner bearing in a box between the holes and sustained at the other end by a post or out rigger; outside of the fan on the shaft is the pulley to drive it marked G. The fan is formed with two heads or flanges about four feet in diameter made fast to the horizontal shaft about one foot apart; between said heads are affixed four or more fans or buckets, the inner end made fast to the four sides of the shaft extending outwards as far as the outer edge of the heads or flanges and made fast to them; through the inside head or flange and close to the shaft are cut holes between each bucket corresponding and against the holes through the plate and box; over the roller E and

resting on and turned by the vellum (over which the web of fur is passing) is a roller H, having its bearings in the posts J and L. This roller is about four inches diameter 5 and as long as roller E having a lateral motion, sufficient to harden the web, the lateral motion is given by a lever, I, attached to the journal of said roller outside of its bearing, the fulcrum of said lever made fast to the 10 upright post J and its upper end extending upward and resting against the cams of the cam wheel K, the shaded part forming a series of inclined planes; which gives the motion one way and a spring, M, bearing 15 against the end of the journal returns the motion in the opposite direction from the cam, thus making a reciprocal or vibratory motion, the said cam wheel K is made fast or formed on the inside of the pulley P; and 20 when this, or the back part of my machine is thus formed, arranged and put together, and then inclosed, a vacuum or exhaust chamber is over the wire vellum into which the fur is thrown by the quick fancy; and 25 then by exhausting said chamber by suction, or draft, the fur is drawn tight upon the vellum, or wire cloth until it passes out with said vellum under roller H, which by its 30 vibratory or tremulous motion hardens it into a web of sufficient tenacity to be handled and formed into hat bodies, or used as napping, the motion of the machine, is given by the main shaft O, which receives its bearings on the top of the upright posts 35 marked J and L, and on one end of which is the pulley N, and on the other end the pulley P, a belt passes from the pulley N to the pulley A on the main cylinder shaft, which gives motion to the carder. A belt on the 40 pulley P to the pulley y gives an increased motion to shaft z and pulleys S and R. A belt from pulleys S conveys motion to a small pulley G on fan F. A cross belt from pulley R conveys a rapid motion to the pulley 45 B on the shaft of the quick fancy, which throws the fur from the doffer into the exhaust chamber; a belt from pulley U on the shaft of the doffer conveys motion to the pulley T, which, by a pair of gears conveys 50 a slow motion to the driving roller (number one) of the feed apron; on the opposite end of roller one is pulley Q, which by a belt conveys motion to pulley C on the shaft of the roller D, which gives motion to the vellum 55 apron; a crossed belt on pulley, (number two), conveys motion to pulley X on the shaft of feeding card; pulley W receives its motion from a pinion wheel on the main cylinder shaft to a large tooth wheel which 60 is made fast to the pulley W; on an out rig- 65 ger, a belt from pulley W gives motion to the doffer over pulley V. When all these parts are thus arranged and the body of the machine inclosed tight, including all the cards, (except the feed apron) the belts may

be put on the several pulleys as represented; then pass a belt upon the driving pulley of the main shaft from the first mover, and all will be in motion. The fur will be received from the feeding apron by the feed rollers, 70 and be carried by the licker-in to the main cylinder and passing all the workers and strippers it will be received upon the doffer, and by the quick fancy will be thrown into the air or exhaust chamber over the wire 75 vellum and by the draft from the fan, drawing the air out through the wire vellum, and by the progressive motion of the said vellum. The fur is carried off as above described by passing out under the division in 80 this part of the machine, and hardened by the roller H, as above described.

Having thus described my machine, I will now state that I do not claim or describe any particular or given speed to run 85 the cards, or the vellum, or wire cloth, nor the quality of fur necessary to use, nor the quantity of fur necessary to feed on the feed apron in a given time, but the speed and feed must be governed by the thickness of 90 the web required and different thicknesses of web required from different kinds of fur to be used for different purposes, consequently the alteration of the coöperating parts of the machine may be varied accord- 95 ing to the skill of the manager.

I do not claim any particular number of revolving fans to exhaust the chamber of air. Although I have described but one on the one side of the chamber, two or more 100 may be applied or one on each side of the chamber when a more powerful draft is required; but it is necessary to regulate the draft in such a manner that the fur will be deposited equally on all parts of the vellum 105 when a web of a uniform thickness is required, or a web may be formed thicker on one side than upon the other, or thickest in the center and tapering toward both edges; these variations may be effected in different ways; a board may be placed in the inside 110 of the box under the vellum in different positions to break or change the current of air, as it passes through, which will cause the fur to deposit differently on the vellum; pipes may be placed leading from the inside 115 of the box that the air passing into them and out at one end may regulate the distribution, these pipes may be perforated with holes. The quick fancy that throws the fur from the doffer will raise sufficient current of air by its rapid motion to carry the fur to the vellum with the assistance of the draft of the fan.

I do not claim the fan as my invention nor the wire vellum apron, nor any part separately, but

I do claim as my improvement or invention—

The forming the batting or web of fur by 130

throwing the fur into a chamber and depositing it on an endless web of wire cloth, or vellum revolving around two extended rollers, and by exhausting said chamber of air by a revolving fan on the outside of said chamber, the air passing through the wire cloth deposits the fur upon it and draws it tight upon the wire cloth, at the same time the wire cloth is forming its progressive motion, and carries the fur under a vibrating roller which hardens it to a sufficient tenacity to be handled, and formed into hat bodies or used for naps, and the arrangement and combination of the above machinery and parts of machinery in the manner **15** above described and set forth and for the purposes aforesaid.

THOS. BLANCHARD.

Witnesses:

DAN'L M. FRYE,
JAMES PALMER.